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## EMERGENT CHEMICAL INFORMATION

**Perchlorate** ( $\text{ClO}_4^-$ ) originates as a contaminant in the environment from the inorganic salts of ammonium, potassium, magnesium or sodium perchlorate. This pollutant is exceedingly mobile in aquifer systems. It can persist for many decades under typical groundwater and surface water conditions, because of its resistance to react with other available constituents. Perchlorate is among a group of unregulated chemicals requiring monitoring pursuant to Title 22, California Code of Regulations § 64450. The California Department of Health Services (DHS) action level for Perchlorate is 4  $\mu\text{g/L}$ .

**N-Nitrosodimethylamine**, is also known as NDMA ( $\text{C}_2\text{H}_6\text{N}_2\text{O}$ ), a product from the decomposition of unsymmetrical dimethyl hydrazine, a component used in the production of rocket fuel (Aerozine 50). This chemical is used as an additive in liquid propellant fuel for rocket engines. NDMA is used primarily in research (NTP, 2000), but it can also be formed inadvertently in a number of industrial processes. NDMA is identified as a carcinogen under California's Health and Safety Code section 25249.5, *et seq.*, and the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). In addition, the United States Environmental Protection Agency (U. S. EPA) identifies NDMA as a "probable human carcinogen" (U. S. EPA, 1997). The DHS action level for NDMA is 10  $\text{ng/L}$ .

**1,4-Dioxane** is used as a stabilizer for chlorinated solvents or volatile organic compounds (VOCs), particularly 1,1,1-trichloroethane approximately 90% of the 1,4-dioxane produced. Releases of chlorinated solvents or VOCs may be a primary source of 1,4-dioxane in the environment. 1,4-dioxane has a high potential for entering the environment due to its volatility and solubility in water. Spent chlorinated solvents disposed of improperly can contaminate ground and surface water, and 1,4-dioxane has been detected in surface waters throughout the United States. Exposure to small amounts of 1,4-dioxane may lead to significant adverse health effects. The primary routes of exposure include inhalation, ingestion and dermal contact. U. S. EPA has classified 1,4-dioxane as a Group B2, probable human carcinogen of low carcinogenic hazard. The DHS action level for 1,4-Dioxane 2  $\mu\text{g/L}$ .

**1,2,3-Trichloropropane (TCP)**: This chemical has been used primarily as a solvent and extractive agent. As a solvent, it has commonly been used as a paint and varnish remover, a cleaning and degreasing agent and a cleaning and maintenance solvent. TCP is not a naturally occurring chemical. Releases to the environment are likely to occur as a result of its manufacture, formulation, and use as a solvent and extractive agent, paint and varnish remover, cleaning and degreasing agent, cleaning and maintenance reagent, and chemical intermediate. TCP is also used as a pesticide in the formulations with dichloropropenes in the manufacture of D-D, a soil fumigant. 1,2,3-Trichloropropane (TCP) is *reasonably anticipated to be a human carcinogen* based on sufficient evidence of malignant tumor formation at multiple sites in multiple species of experimental animals. The DHS action level for 1,2,3 TCP is 0.005  $\mu\text{g/L}$ .

**Hexavalent Chromium**: This chemical is a dissolved heavy metal that is or has been used in industrial processes, such as metal plating and as a corrosion inhibitor in cooling tower water. Chromium VI is a known human carcinogen. Chromium VI detection in drinking water wells has resulted in well closures. There is no Federal or State regulatory standard for chromium VI. However, California Senate Bill 351 proposes to have one in place starting January 1, 2004. For now, the regulatory standards being used apply only to total chromium, the combined concentrations of chromium III and chromium VI. The risk-based California drinking water standard or maximum contaminant level (MCL) of 50  $\mu\text{g/L}$  has been established for total chromium (chromium III and chromium VI).

**Polybrominated Diphenyl Ether (PBDE)**: A family of flame-retardants used in polyurethane foam, textiles, and plastic electronic casings. This chemical bioaccumulates in marine mammals, birds, and humans.